



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

APPEAL BRIEF FOR THE APPELLANT

Ex parte Takaaki INOUE et al. (Applicant)

AUTOMATIC SYNTHESIS MACHINE

Serial Number: 09/698,289

Filed: October 30, 2000

Appeal No.:

Group Art Unit: 1743

Examiner: Dwayne K. Handy

Submitted by:

Thomas E. Brown

Registration No. 44,450

Attorney for Appellants

WESTERMAN, HATTORI,  
DANIELS & ADRIAN, LLP  
1250 Connecticut Avenue NW, Suite 700  
Washington, D.C. 20036  
Tel (202) 822-1100  
Fax (202) 822-1111

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re the Application of: **Takaaki INOUE et al.**

Serial Number: **09/698,289**

Filed: **October 30, 2000**

For: **AUTOMATIC SYNTHESIS MACHINE**

**Appeal No.: Unassigned**

**Group Art Unit: 1743**

**Examiner: Dwayne K. Handy**

**Confirmation Number: 4397**

**Attorney Docket Number: 001448**

**Customer Number: 38834**

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Applicants appeal the March 8, 2006 rejection of claims 3-7.

Following the Notice of Appeal filed on September 1, 2006, the following is the  
Applicants (now referred to hereinbelow as "appellants") Appeal Brief.

**I. REAL PARTY IN INTEREST**

The real party in interest is the assignee of the subject application, which is:

**Shimadzu Corporation, 1, Nishinokyo-Kuwabaracho, Nakagyo-ku, Kyoto-shi, Japan** by an  
assignment recorded in the U.S. Patent and Trademark Office on October 30, 2000, at Reel  
011380, Frame 0483.

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**II. RELATED APPEALS AND INTERFERENCES**

Appellants know of no other appeals or interference proceedings related to the present appeal.

**III. STATUS OF CLAIMS**

Pending claims 3-7 stand rejected. Claims 1 and 2 have been canceled. No claims have been allowed or objected to. The claims on appeal are claims 3-7.

**IV. STATUS OF AMENDMENTS**

An Amendment was filed under 37 CFR 1.111 on November 26, 2003 in which claims 1, 2, 4, 5, 6 and 7 were amended. An Amendment was filed under 37 CFR 1.116 on May 3, 2004 in which claims 1, 6 and 7 were amended. An Amendment was filed under 37 CFR 1.111 filed on December 20, 2004 in which claims 3-7 were amended. An Amendment was filed on June 17, 2005 under 37 CFR 1.116 in which claims 1 and 2 were canceled and claim 5 was amended. An Amendment under 37 CFR 1.111 was filed on December 28, 2005 in which claim 5 was amended. Each of these Amendments has been entered.

An Amendment was filed on May 23, 2006 under 37 CFR 1.116 in which claims 6 and 7 were amended. In item 7 of the Advisory Action dated August 30, 2006, it is indicated that for purposes of appeal, the proposed amendments will be entered. As such, entry of this Amendment is respectfully requested. The list of claims in the Claim Appendix includes the claims as last amended in the Amendment filed May 23, 2006.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a control device for an automatic synthesis machine.

With respect to claim 3, a control device (see, e.g., the control device 3 in Fig. 1) for an automatic synthesis machine (see, e.g., automatic synthesis machine 1 in Fig. 1), said control device comprising: a display device (see, e.g., display device 4 and vessel display screen 41 in Fig. 1; and page 15, line 24 – page 16, line 1) for displaying at least a part of vessels (see, e.g., vessel 22 in Fig. 1) housed in a reactor (see, e.g., reactor 21 in Fig. 1); and a selection means (see, e.g., vessel selection means 5 in Fig. 1; and page 17, lines 5-10) for selecting one or more vessels among the vessels displayed on a screen (see, e.g., vessel display screen 41 in Fig. 1) of the display device, wherein said display device is connected to a protocol creation means (see, e.g., protocol creation means 7 in Fig. 1; and page 18, lines 12-25) for creating a protocol prescribing the procedure of synthesis operation related to said vessels (see, e.g., page 18, lines 21-26), and said selection means receives data related to the vessels set in creation of the protocol from said protocol creation means (see, e.g., page 18, lines 12-18), causing the display device to display the selected vessels in a manner such that they can be identified on the screen from the non-selected vessels, together with the operation contents related to the selected vessels (see, e.g., page 19, lines 11-15; page 20, line 22 – page 21, line 25 and Fig. 3), wherein the protocols include one of a reagent type and an operation type (see, e.g., reagent type 1A in Fig. 1).

With respect to claim 4, a control device (see, e.g., the control device 3 in Fig. 1) for an automatic synthesis machine (see, e.g., automatic synthesis machine 1 in Fig. 1), said control device comprising: a display device (see, e.g., display device 4 and vessel display screen 41 in Fig. 1; and age 15, line 24 – page 16, line 1) for displaying at least a part of vessels housed in a reactor; and a selection means (see, e.g., vessel selection means 5 in Fig. 1; and page 17, lines 5-10) for selecting one or more vessels among the vessels displayed on a screen (see, e.g., vessel display screen 41 in Fig. 1) of the display device, wherein said display device is connected to a storage means (see, e.g., storage means 6 in Fig. 1; and page 18, line 26 – page 19, line 3) for storing a protocol prescribing a procedure of synthesis operation related to said vessels (see, e.g., page 18, lines 21-26), and displays the stored protocol in said storage means on the screen for selection of one line of the displayed protocol by said selection means (see, e.g., page 18, lines 19-21; and display protocol screen 42 in Fig. 1), causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels (see, e.g., page 19, lines 4-8), together with operation contents related to said selected vessels (see, e.g., page 19, lines 11-15; and page 21, lines 4-7), wherein the protocols include one of a reagent type and an operation type (see, e.g., reagent type 1A in Fig. 1).

With regard to claim 5, a control device (see, e.g., the control device 3 in Fig. 1) for an automatic synthesis machine (see, e.g., automatic synthesis machine 1 in Fig. 1), comprising: a display device (see, e.g., display device 4 and vessel display screen 41 in Fig. 1; and page 15, line 24 – page 16, line 1) for displaying at least a part of vessels housed in a reactor; a selection

means (see, e.g., vessel selection means 5 in Fig. 1; and page 17, lines 5-10) for selecting one or more vessels among the vessels displayed on a screen (see, e.g., vessel display screen 41 in Fig. 1) of the display device, a storage means for storing protocols (see, e.g., storage means 6 in Fig. 1; and page 18, line 21 – page 19, line 3), and a protocol execution means (see, e.g., protocol execution means 8 in Fig. 1; and page 19, line 16 – page 20, line 1) for executing at least one stored protocol, wherein said display device is connected to said protocol execution means, and said protocol execution means reads out a protocol from said storage means one line at a time in sequence for execution, causing the display device to display the protocol line in process of execution on the screen together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels (see, e.g., page 19, line 16 - page 20, line 7; and page 22, lines 1-18 and Figs. 4A and 4B), wherein the protocols include one of a reagent type and an operation type (see, e.g., reagent type 1A in Fig. 1).

With regard to claim 6, an automatic synthesis machine for automatic synthesis of compounds by allowing reagents to chemically react with each other (see, e.g., automatic synthesis machine 1 in Fig. 8; and page 25, lines 1-23), comprising: a plurality of vessels (see, e.g., vessels in Fig. 8) for use in synthesis of compounds; a selection means (see, e.g., vessel selection means 5 in Fig. 8) for selecting a specific vessel among said plurality of vessels; an analysis means (see, e.g., analysis means 9 in Fig. 8) for analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol and checking said commands for errors (see, e.g., the flow chart of Fig. 9,

especially Steps S13 and S14; and page 30, line 11 – page 31, line 25, especially page 31, lines 16-21); and a protocol execution means (see, e.g., protocol execution means 8 in Fig. 8) for executing the analyzed protocol; wherein the protocols include one of a reagent type and an operation type (see, e.g., reagent type 1A in Fig. 1).

With respect to claim 7, a control device (see, e.g., control device 3 in Fig. 8; and page 25, lines 15-23) used for an automatic synthesis machine to drive a suction/injection unit for suction or injection of reagents in vessels housed in a reactor, said control device comprising: a display means (see, e.g., display device 4 in Fig. 8) having display screens (see, e.g., vessel display screen 41 and protocol display screen 42 in Fig. 8); a protocol creation means (see, e.g., protocol creation means 7 in Fig. 8) for creating a protocol; a storage means (see, e.g., storage means 6 in creation means 7 in Fig. 8) for storing the protocol; a selection means (see, e.g., vessel selection means 5 in Fig. 8) for selecting the vessel; and a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create the operational procedure related to the selected vessel, checking said operational procedure contents for errors, causing the storage device to store the contents of the operational procedure and also causing said display device to display them on the screen (see, e.g., page 29, lines 7-14; page 30, lines 17 – page 31, line 25; and the flow chart in Fig. 9); wherein the protocols include one of a reagent type and an operation type (see, e.g., reagent type 1A in Fig. 1).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- A. The rejection of claim 6 under 35 USC 102(a) as being anticipated by Wang et al. (U.S. Patent No. 6,489,168).
- B. The rejection of claims 3, 4, 5 and 7 under 35 USC 103(a) as being unpatentable over Wang et al. in view of Borders (U.S. Patent No. 6,351,678).

### **ARGUMENTS**

#### **A. Rejection of claim 6 under 35 USC 102(e) as being anticipated by Wang.**

Claim 6 calls for *an analysis means for analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol and checking said commands for errors.*

For example, as discussed on page 31, lines 11-19 of the present specification:

When a vessel is selected, all the operation contents which are related to the selected are picked out from the storage means 6, and the picked-out vessel is displayed in a manner such that it can be identified on the vessel display screen 41, together with the operation contents related to the selected vessel (Step S12). Then, the analysis means 9 checks the operation contents related to the selected vessel (Step S13). If an error is found in the operation contents, the analysis means displays the message to the effect (Step S15).

The applied reference of Wang discloses in col. 6, lines 36-43 the following:

Reactor control system 100 can also determine whether the reaction occurring in one or more reactor vessels 210 has reached a specified conversion target based on results calculated in step 360; in that case, reactor control system 100 causes the addition of a quenching agent to the relevant reactor vessel or vessels as discussed above, terminating the reaction in that vessel.

However, it is respectfully submitted that the addition of the quenching agent to terminate a reaction in a vessel fails to constitute *analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol*, as called for in claim 6.

Moreover, even if, assuming *arguendo*, that the addition of the quenching agent to terminate a reaction in a vessel does constitute *analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol*, as called for in claim 6, it is respectfully submitted that Wang is completely silent with regard to *an analysis means for... checking said commands for errors*. That is, Wang fails to disclose or fairly suggest that any of the commands concerning the addition of a quenching agent are checked by the data analysis module 145 of the reactor control system 100 for errors.

Furthermore, while Wang may provide a system alarm for when an error occurs in Table 4, col. 15, lines 39-41, the Examiner has failed to establish that the system alarm has anything to do with the checking the commands concerning the addition of a quenching agent.

It is well settled that:

“A claim is anticipated only if each and every element *as set forth in the claim* is found, either expressly or inherently described, in a single prior art reference.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1567, 7 USPQ2d 1057 (Fed. Cir. 1988).”

Accordingly, it is respectfully submitted that Wang fails to anticipate claim 6, since such reference fails to disclose each and every element set forth in claim 6, specifically Wang fails to disclose or fairly suggest the feature of claim 6 concerning *an analysis means for analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol and checking said commands for errors.*

**B. Rejection of claims 3, 4, 5 and 7 under 35 USC 103(a) as being unpatentable over Wang et al. in view of Borders.**

**I. Claim 3:**

Independent claim 3 calls for *wherein said display device is connected to a protocol creation means for creating a protocol prescribing the procedure of synthesis operation related to said vessels, and said selection means receives data related to the vessels set in creation of the protocol from said protocol creation means, causing the display device to display the selected vessels in a manner such that they can be identified on the screen from the non-selected vessels, together with the operation contents related to the selected vessels.*

For example, as discussed on page 18, lines 20-25 of the present specification:

The process of creation of the protocol may be carried out by inputting a vessel and the operation contents related to the vessels by key inputting through the input means 10 or by inputting through the pointing device of the input means 10 on the vessel display screen 41.

With regard to the applied reference of Wang, the Examiner asserts that such reference teaches, “a protocol creation means 700 for creating a protocol based on data supplied from the selector and displaying the vessels together with operation contents of the vessels (Figs. 7a-8, claim 3).”<sup>1</sup> However, it is respectfully submitted that the Examiner is mis-characterizing the features of Wang, since while Wang may disclose in col. 12, lines 53-54, that “the user can monitor an experiment in reaction window 700,” Wang is completely silent with regard to using the reaction window 700 to create a protocol prescribing the procedure of synthesis operation related to the selected vessels, as called for in claim 3. In other words, while the reaction window 700 may enable a user to monitor an experiment, it does not enable a user to create a protocol prescribing the procedure of synthesis operation related to the selected vessels.

It is also noted that Wang discloses in col. 5, lines 61-67 the following:

The user can also set other reaction parameters that can include, for example, a time at which additional reagents, such as liquid co-monomer in a co-polymerization experiment, should be added to reaction vessels 210, or a target conversion percentage at which a quenching agent should be added to terminate a catalytic polymerization experiment.

However, while such disclosure may suggest the creation of a protocol relating to the reaction vessels 210, it is submitted that Wang fails to disclose a selection means that receives data related to the vessels set in the creation of the protocol, which causes a display device to display the selected vessels in a manner such that they can be identified on the screen from the non-selected vessels, together with the operation contents related to the selected vessels, as called for in claim 3.

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<sup>1</sup> Please see, page 5, lines 4-6 of the Official Action dated March 24, 2005.

For example, as discussed in page 18, lines 12-18 of the present specification:

In selection of vessels based on data from the protocol creation means 7, the vessels set in the creation of the protocol by the protocol creation means 7 are selected. The vessel selection means 5 receives vessel data set by the protocol creation means 7, and then displays the vessels on the vessel display screen 41 based on the data received.

Also, as discussed in page 20, line 22 – page 21, line 7 of the present specification:

Fig. 3 shows the vessel display screen in case of selecting two vessels to carry out suction of reagents therein for injection into another vessel. First, selection of the vessels 1A, 1B is performed on the vessel display screen 41 for suction of the reagents 1a, 1b from the selected vessels 1A, 1B. The vessel display screen 41 shows the selection of the vessels 1A, 1B by displaying them in a form such that they can be distinguished from the other. The vessel display screen 41 may show the operation contents related to the selected vessels by attaching to the displayed vessels a specific indication such as a color or a mark corresponding to the operation of suction.

In addition, the Examiner properly acknowledges, in the bridging sentence between pages 6 and 7 of the Official Action dated October 5, 2005 that Wang fails to disclose or fairly suggest the features of claim 3 regarding that only the vessels that are part of the created protocol are selected such they can be identified from the non-selected vessels on the display screen together with the operation contents related to the selected vessels.

In order to overcome the above-noted drawbacks and deficiencies of Wang, the Examiner relies on the secondary reference of Borders.

However, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the teachings of Borders with that of Wang, since these references belong to non-analogous arts. More specifically, while Wang is directed to computer programs

and computer-implemented methods for monitoring the process and properties of parallel chemical reactions, Borders relates to medical device controllers for controlling operating room equipment such as articulated surgical table and a controllable mattress.

In addition, it also submitted that the Examiner has failed to provide any convincing suggestion, teaching or motivation to combine the teachings of Wang and Borders. Instead, the Examiner asserts on page 6, lines 11-15 of the Official Action dated October 5, 2005 that:

It would have been obvious to one of ordinary skill in the art, then, to provide the selection indicator teachings from Borders with the control display of Wang. One would add the selection indicators to Wang in order to remind the user which function of the control system the user is examining or using.

However, according to Wang, a user can view a detailed data window 800 for an individual reactor vessel 210 by selecting it in data display pane 740. See col. 13, lines 6-12. As such, it is submitted that one of ordinary skill in the art would simply not be motivated to add the selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the other menu selections remain at the bottom of the screen, as taught by Borders, to the system of Wang, since Wang is only concerned with displaying an individual reactor vessel 210 in a detailed data window 800, and hence would not need to be reminded of which reactor vessel 210 is being examined in the detailed data window 800.

Moreover, it is submitted that while Borders may disclose in Figs. 9-12 selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the other menu selections remain at the bottom of the screen, Borders fails to disclose or suggest that

these selection indicators 118, 120, 122, 124, constitute vessels that are part of the created protocol and are selected such they can be identified from the non-selected vessels on the display screen together with the operation contents related to the selected vessels, as called for in claim 3.

Therefore, even if, assuming *arguendo*, that Wang and Borders are combined in the manner suggested by the Examiner, such combination would fail to disclose the features of claim 3 concerning *said display device is connected to a protocol creation means for creating a protocol prescribing the procedure of synthesis operation related to said vessels, and said selection means receives data related to the vessels set in creation of the protocol from said protocol creation means, causing the display device to display the selected vessels in a manner such that they can be identified on the screen from the non-selected vessels, together with the operation contents related to the selected vessels.*

## II. Claim 4:

Independent claim 4 calls for *wherein said display device is connected to a storage means for storing a protocol prescribing a procedure of synthesis operation related to said vessels, and displays the stored protocol in said storage means on the screen for selection of one line of the displayed protocol by said selection means, causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to said selected vessels.*

For example, as discussed in page 18, lines 19 – page 8 of the present specification:

The protocol creation means 7 performs the creation of the protocol and then displays the created protocol lines on the protocol display screen 42. ...

The selection means 5 causes the vessels described in the protocol lines on the protocol display screen 42 to be displayed on the vessel display screen 41. The vessel display screen 41 of Fig. 1 shown that the vessels 2A, 2b described in the fourth protocol line are selected.

It is respectfully submitted that Wang simply fails to disclose or fairly suggest a display device for displaying lines of a stored protocol to be selected and for causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to the selected vessels.

In addition, the Examiner properly acknowledges, in the bridging sentence between pages 6 and 7 of the Official Action dated October 5, 2005 that Wang fails to disclose or fairly suggest the features of claim 4 regarding *causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to said selected vessels.*

In order to overcome the above-noted drawbacks and deficiencies of Wang, the Examiner relies on the secondary reference of Borders.

However, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the teachings of Borders with that of Wang, since these references

belong to non-analogous arts. More specifically, while Wang is directed to computer programs and computer-implemented methods for monitoring the process and properties of parallel chemical reactions, Borders relates to medical device controllers for controlling operating room equipment such as articulated surgical table and a controllable mattress.

In addition, it also submitted that the Examiner has failed to provide any convincing suggestion, teaching or motivation to combine the teachings of Wang and Borders. Instead, the Examiner asserts on page 6, lines 11-15 of the Official Action dated October 5, 2005 that:

It would have been obvious to one of ordinary skill in the art, then, to provide the selection indicator teachings from Borders with the control display of Wang. One would add the selection indicators to Wang in order to remind the user which function of the control system the user is examining or using.

However, according to Wang, a user can view a detailed data window 800 for an individual reactor vessel 210 by selecting it in data display pane 740. See col. 13, lines 6-12. As such, it is submitted that one of ordinary skill in the art would simply not be motivated to add the selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the other menu selections remain at the bottom of the screen, as taught by Borders, to the system of Wang, since Wang is only concerned with displaying an individual reactor vessel 210 in a detailed data window 800, and hence would not need to be reminded of which reactor vessel 210 is being examined in the detailed data window 800.

Moreover, it is submitted that while Borders may disclose in Figs. 9-12 selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the

other menu selections remain at the bottom of the screen, Borders fails to disclose or suggest that these selection indicators 118, 120, 122, 124, constitute vessels that are described in a selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to the selected vessels, as called for in claim 4.

Therefore, even if, assuming *arguendo*, that Wang and Borders are combined in the manner suggested by the Examiner, such combination would fail to disclose the features of claim 4 concerning *wherein said display device is connected to a storage means for storing a protocol prescribing a procedure of synthesis operation related to said vessels, and displays the stored protocol in said storage means on the screen for selection of one line of the displayed protocol by said selection means, causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to said selected vessels.*

### III. Claim 5:

Independent claim 5 calls *wherein said display device is connected to said protocol execution means, and said protocol execution means reads out a protocol from said storage means one line at a time in sequence for execution, causing the display device to display the protocol line in process of execution on the screen, together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels.*

For example, as discussed in page 22, lines 4-18 of the present specification:

In the execution of the protocol prescribing the operation of sucking up the reagent 1a from the vessel 1A for injection into the empty vessel 4A and the subsequent operation of sucking up the reagent 1b from the vessel 1B for injection into the vessel 4A, the vessels are displayed on the vessel display screen 41 according to the sequence of execution of the protocol. Fig. 4A shows the case of sucking up the reagent 1a from the vessel 1A for injection into the vessel 4A, and Fig. 4B shows the case of sucking up the reagent 1b from the vessel 1B for injection into the vessel 4A. As shown in Fig. 4, since the vessels and the operation content related to the vessels are displayed in a manner such that they can be identified even in the process of execution of the protocol, it is possible to ascertain the synthesis operation easily.

It is respectfully submitted that Wang simply fails to disclose or fairly suggest *said protocol execution means reads out a protocol from said storage means one line at a time in sequence for execution, causing the display device to display the protocol line in process of execution on the screen, together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels.*

In addition, the Examiner properly acknowledges, in the bridging sentence between pages 6 and 7 of the Official Action dated October 5, 2005 that Wang fails to disclose or fairly suggest the features of claim 5 regarding *causing the display device to display the protocol line in process of execution on the screen, together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels.*

In order to overcome the above-noted drawbacks and deficiencies of Wang, the Examiner relies on the secondary reference of Borders.

However, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the teachings of Borders with that of Wang, since these references belong to non-analogous arts. More specifically, while Wang is directed to computer programs and computer-implemented methods for monitoring the process and properties of parallel chemical reactions, Borders relates to medical device controllers for controlling operating room equipment such as articulated surgical table and a controllable mattress.

In addition, it also submitted that the Examiner has failed to provide any convincing suggestion, teaching or motivation to combine the teachings of Wang and Borders. Instead, the Examiner asserts on page 6, lines 11-15 of the Official Action dated October 5, 2005 that:

It would have been obvious to one of ordinary skill in the art, then, to provide the selection indicator teachings from Borders with the control display of Wang. One would add the selection indicators to Wang in order to remind the user which function of the control system the user is examining or using.

However, according to Wang, a user can view a detailed data window 800 for an individual reactor vessel 210 by selecting it in data display pane 740. See col. 13, lines 6-12. As such, it is submitted that one of ordinary skill in the art would simply not be motivated to add the selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the other menu selections remain at the bottom of the screen, as taught by Borders, to the system of Wang, since Wang is only concerned with displaying an individual reactor vessel 210

in a detailed data window 800, and hence would not need to be reminded of which reactor vessel 210 is being examined in the detailed data window 800.

Moreover, it is submitted that while Borders may disclose in Figs. 9-12 selection indicators 118, 120, 122, 124, which when selected is identified at the top of the screen while the other menu selections remain at the bottom of the screen, Borders fails to disclose or suggest that these selection indicators 118, 120, 122, 124, constitute vessels that are described in a selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to the selected vessels, as called for in claim 4.

Therefore, even if, assuming *arguendo*, that Wang and Borders are combined in the manner suggested by the Examiner, such combination would fail to disclose the features of claim 5 concerning *wherein said display device is connected to said protocol execution means, and said protocol execution means reads out a protocol from said storage means one line at a time in sequence for execution, causing the display device to display the protocol line in process of execution on the screen, together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels.*

**IV. Claim 7:**

Independent claim 7 calls for *a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create the operational procedure related to the selected vessel, checking said operation contents for errors, causing the storage device to store the contents of the operational procedure and also causing said display device to display them on the screen.*

For example, as discussed on page 31, lines 11-19 of the present specification:

When a vessel is selected, all the operation contents which are related to the selected are picked out from the storage means 6, and the picked-out vessel is displayed in a manner such that it can be identified on the vessel display screen 41, together with the operation contents related to the selected vessel (Step S12). Then, the analysis means 9 checks the operation contents related to the selected vessel (Step S13). If an error is found in the operation contents, the analysis means displays the message to the effect (Step S15).

The applied reference of Wang discloses in col. 6, lines 36-43 the following:

Reactor control system 100 can also determine whether the reaction occurring in one or more reactor vessels 210 has reached a specified conversion target based on results calculated in step 360; in that case, reactor control system 100 causes the addition of a quenching agent to the relevant reactor vessel or vessels as discussed above, terminating the reaction in that vessel.

However, it is respectfully submitted that the addition of the quenching agent to terminate a reaction in a vessel fails to constitute *a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create the operational procedure related to the selected vessel*, as called for in claim 7.

Moreover, even if, assuming *arguendo*, that the addition of the quenching agent to terminate a reaction in a vessel does constitute *a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create the operational procedure related to the selected vessel*, as called for in claim 4, it is respectfully submitted that Wang is completely silent with regard to *a protocol line analysis means for... checking said operation contents for errors*. That is, Wang fails to disclose or fairly suggest that any of the commands concerning the addition of a quenching agent are checked by the data analysis module 145 of the reactor control system 100 for errors.

Furthermore, while Wang may provide a system alarm for when an error occurs in Table 4, col. 15, lines 39-41, the Examiner has failed to establish that the system alarm has anything to do with the checking the operation contents of adding a quenching agent..

Moreover, it is submitted that the secondary reference of Borders fails to cure the above-noted drawbacks and deficiencies of Wang. Further, as discussed above with regard to claims 3, 4 and 5, the Examiner has failed to provide any convincing suggestion, teaching or motivation to combine the teachings of Wang and Borders.

Section 2143 of the MPEP has specifically stated that:

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the

art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 466, 20 USPQ2d 1438 (Fed. Cir. 1991)."

In view of the above, it is respectfully submitted that even if the teachings of Wang and Borders can be combined in the manner suggested by the Examiner, such combined teachings would still fail to disclose or fairly suggest the feature of claim 7 concerning *a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create the operational procedure related to the selected vessel, checking said operation contents for errors, causing the storage device to store the contents of the operational procedure and also causing said display device to display them on the screen.*

For at least these reasons, it is submitted that the Examiner has failed to establish a *prima facie* case of obviousness and therefore the obviousness rejection of claims 3, 4, 5 and 7 should be withdrawn.

### **VIII. CONCLUSION**

For the above reasons, Appellant requests that the Board of Patent Appeals and Interferences reverse the Examiner's rejections of claims 3-7.

In the event this paper is not timely filed, appellants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 50-2866, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP



Thomas E. Brown

Attorney for Appellants

Reg. No. 44,450

TEB/jl

Enclosures:    Claims appendix  
                 Evidence appendix  
                 Related proceedings appendix

**CLAIMS APPENDIX**

Claims 1 and 2 (Cancelled).

Claim 3 (Previously Presented): A control device for an automatic synthesis machine,

said control device comprising:

a display device for displaying at least a part of vessels housed in a reactor; and

a selection means for selecting one or more vessels among the vessels displayed on a

screen of the display device,

wherein said display device is connected to a protocol creation means for creating a protocol prescribing the procedure of synthesis operation related to said vessels, and said selection means receives data related to the vessels set in creation of the protocol from said protocol creation means, causing the display device to display the selected vessels in a manner such that they can be identified on the screen from the non-selected vessels, together with the operation contents related to the selected vessels,

wherein the protocols include one of a reagent type and an operation type.

Claim 4 (Previously Presented): A control device for an automatic synthesis machine,

said control device comprising:

a display device for displaying at least a part of vessels housed in a reactor; and

a selection means for selecting one or more vessels among the vessels displayed on a

screen of the display device,

wherein said display device is connected to a storage means for storing a protocol prescribing a procedure of synthesis operation related to said vessels, and displays the stored protocol in said storage means on the screen for selection of one line of the displayed protocol by said selection means, causing the display device to display the selected vessels described in the selected protocol line in a manner such that they can be identified on the screen from the non-selected vessels, together with operation contents related to said selected vessels, wherein the protocols include one of a reagent type and an operation type.

Claim 5 (Previously Presented): A control device for an automatic synthesis machine, comprising:

a display device for displaying at least a part of vessels housed in a reactor; a selection means for selecting one or more vessels among the vessels displayed on a screen of the display device, a storage means for storing protocols, and a protocol execution means for executing at least one stored protocol, wherein said display device is connected to said protocol execution means, and said protocol execution means reads out a protocol from said storage means one line at a time in sequence for execution, causing the display device to display the protocol line in process of execution on the screen, together with the vessels described in said protocol line and operation contents related to said vessels in a manner such that the described vessels can be identified on the screen from the non-described vessels,

wherein the protocols include one of a reagent type and an operation type.

Claim 6 (Previously Presented): An automatic synthesis machine for automatic synthesis of compounds by allowing reagents to chemically react with each other, comprising:  
a plurality of vessels for use in synthesis of compounds;  
a selection means for selecting a specific vessel among said plurality of vessels;  
an analysis means for analyzing a protocol prescribing a series of commands for synthesis of compounds, picking out commands related to the selected vessel from said protocol and checking said commands for errors; and  
a protocol execution means for executing the analyzed protocol;  
wherein the protocols include one of a reagent type and an operation type.

Claim 7 (Previously Presented): A control device used for an automatic synthesis machine to drive a suction/injection unit for suction or injection of reagents in vessels housed in a reactor, said control device comprising:  
a display means having display screens;  
a protocol creation means for creating a protocol;  
a storage means for storing the protocol;  
a selection means for selecting the vessel; and  
a protocol line analysis means for picking out all the operation contents related to the vessel selected by said selection means from the protocol stored in said storage means to create

the operational procedure related to the selected vessel, checking said operation contents for errors, causing the storage device to store the contents of the operational procedure and also causing said display device to display them on the screen; wherein the protocols include one of a reagent type and an operation type.

**EVIDENCE APPENDIX**

No evidence under 37 C.F.R. § 41.37(c)(1)(ix) is submitted.

**RELATED PROCEEDING APPENDIX**

No decisions under 37 C.F.R. § 41.37(c)(1)(x) are rendered.